

# Mineral Industry Surveys

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## SULFUR IN SEPTEMBER 2004

During the month, production of recovered elemental sulfur was 755,000 metric tons, according to the U.S. Geological Survey. September production was 8% lower than that of August 2004 and 8% higher than that of September 2003. Shipments were 10% lower than those of August 2004. Producers' ending stocks for September 2004 were 189,000 tons. Decreased production and shipments resulted from a series of hurricanes that struck the Gulf Coast region, forcing natural gas plants and petroleum refineries to curtail operations until the danger had passed.

Import and export data for September 2004 were not available at the time of publication and will be published in the Sulfur in

October 2004 Mineral Industry Surveys along with apparent consumption. Imports of recovered sulfur for August 2004 were estimated to be 227,000 tons; exports were 134,000 tons. Imports of sulfuric acid for August 2004 were 194,000 tons; exports were 40,000 tons.

Significant adjustments have been made to the sulfur import data. Reports from the U.S. Census Bureau appear to underreport sulfur imports especially material from Canada. The revised figures are based on Census information, and data from personal communications with industry experts. Better strategies for estimating import data from Canada are being explored.

TABLE 1  
SALIENT SULFUR STATISTICS<sup>1</sup>

(Thousand metric tons)

Period	Production			Shipments, all sources
	Petroleum <sup>2</sup>	Natural gas	Total	
2003:				
January-December	6,970	1,950	8,920	8,910
January-September	5,180	1,460	6,630	6,610
September	544	154	698	708
October	548	166	714	715
November	615	160	775	783
December	630	168	798	804
2004:				
January	577	165	742	762
February	525	155	679	690
March	598	176	774	783
April	610	161	772	771
May	603	177	780	775
June	615	163	778	778
July	648	173	820	812
August	652 <sup>r</sup>	172	823 <sup>r</sup>	838 <sup>r</sup>
September <sup>p</sup>	595	159	755	754
Total	5,420	1,500	6,920	6,960

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes a small quantity from coking operations.

TABLE 2  
U.S. IMPORTS OF SULFUR<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada		Mexico		Total, all countries <sup>2</sup>	
	Quantity <sup>e</sup>	Value <sup>3</sup>	Quantity	Value <sup>3</sup>	Quantity <sup>e</sup>	Value <sup>3</sup>
2003:						
January-December	2,080	32,000	535	26,500	2,810	69,100
January-August	1,440	19,000	357	15,900	1,910	39,300
August	160	2,040	45	1,940	267	4,820
September	160	2,910	44	2,070	213	6,160
October	160	2,460	49	2,470	229	5,760
November	160	2,850	45	2,170	205	6,860
December	160	2,770	40	1,960	230	6,180
2004:						
January	178 <sup>r</sup>	1,720	50	2,400	265 <sup>r</sup>	5,850
February	167 <sup>r</sup>	3,130	35	3,050	232 <sup>r</sup>	7,930
March	178 <sup>r</sup>	3,660	25	2,570	223 <sup>r</sup>	7,210
April	180 <sup>r</sup>	3,060	54	2,550	279 <sup>r</sup>	8,040
May	187 <sup>r</sup>	2,830	57	2,680	272 <sup>r</sup>	6,880
June	180 <sup>r</sup>	2,560	49	2,440	247 <sup>r</sup>	5,980
July	166 <sup>r</sup>	2,790	54	2,550	257 <sup>r</sup>	7,150
August <sup>e</sup>	166	2,050	35	1,780	227	5,290
Total	1,400	19,700	359	20,000	2,000	54,300

<sup>e</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

Sources: U.S. Census Bureau data as adjusted by U.S. Geological Survey and PentalSul North America Sulphur Service.

TABLE 3  
U.S. IMPORTS OF SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Canada			Europe			Total, all countries <sup>2</sup>		
	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>	Quantity	Sulfur content	Value <sup>3</sup>
2003:									
January-December	387	126	16,200	266	86	5,870	905	298	28,800
January-July	256	84	10,100	235	76	4,680	585	193	18,800
August	19	6	980	74	24	751	103	34	2,410
September	22	7	1,150	9	3	382	70	23	2,230
October	35	11	1,520	1	(4)	36	104	34	1,550
November	33	11	1,590	1	(4)	36 <sup>e</sup>	71	23	3,350
December	41	13	1,880	20	7	734	75	25	2,900
2004:									
January	97	32	3,930	--	--	--	114	37	4,610
February	179	58	7,480	21	7	488	204	69	8,450
March	167	54	6,760	6	2	163	176	58	7,280
April	203	66	7,710	14	5	344	221	72	8,410
May	190	62	7,230	22	7	555	222	72	8,120
June	166	54	6,350	11	3	247	192	63	7,860
July	160	52	5,660	10	3	357	172	56	6,230
August	133	43	4,920	33	11	937	194	63	6,250
Total	1,300	421	50,000	117	38	3,090	1,500	490	57,200

<sup>e</sup>Estimated. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include other countries not listed.

<sup>3</sup>Declared customs valuation.

<sup>4</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 4  
U.S. EXPORTS OF SULFUR AND SULFURIC ACID<sup>1</sup>

(Thousand metric tons and thousand dollars)

Period	Sulfur		Sulfuric acid		
	Quantity	Value <sup>2</sup>	Quantity	Sulfur content	Value <sup>2</sup>
2003:					
January-December	742	46,100	207	68	18,800
January-August	525	20,800	149	49	13,200
August	57	2,190	27	9	2,060
September	50	2,090	23	7	1,910
October	72	4,360	12	4	1,200
November	27	4,880	12	4	1,170
December	67	3,920	12	4	1,360
2004:					
January	18	1,740	10	3	1,120
February	6	1,530	13	4	1,520
March	84	5,930	14	5	3,190
April	107	6,550	11	4	1,380
May	81	4,040	10	3	2,370
June	36	1,980	26	8	1,610
July	30	1,670	13	4	1,280
August	134	10,100	40	13	3,210
Total	496	33,600	137	44	15,700

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Declared f.a.s. (free alongside ship) valuation.

Source: U.S. Census Bureau.

TABLE 5  
U.S. CONSUMPTION OF SULFUR<sup>1</sup>

(Thousand metric tons)

Period	Domestic sources <sup>2</sup>	Imports <sup>c</sup>	Consumption
2003:			
January-December	8,170	2,810	11,000
January-August	6,190	1,900	8,090
August	666	267	933
September	658	213	871
October	643	229	872
November	756	205	961
December	731	230	961
2004:			
January	744	265 <sup>r</sup>	1,010 <sup>r</sup>
February	684	232 <sup>r</sup>	916 <sup>r</sup>
March	699	223 <sup>r</sup>	922 <sup>r</sup>
April	664	279 <sup>r</sup>	943 <sup>r</sup>
May	694	272 <sup>r</sup>	966 <sup>r</sup>
June	742	247 <sup>r</sup>	989 <sup>r</sup>
July	782	257 <sup>r</sup>	1,040 <sup>r</sup>
August	704	227	931
Total	5,710	2,000	7,720

<sup>c</sup>Estimated. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Calculated as shipments minus exports.

TABLE 6  
RECOVERED SULFUR PRODUCED AND SHIPPED IN THE UNITED STATES,  
BY PAD (PETROLEUM ADMINISTRATION FOR DEFENSE) DISTRICT<sup>1</sup>

(Thousand metric tons)

District and source	September 2004 <sup>p</sup>		August 2004		Total 2004 <sup>2</sup>		Year to date 2003 <sup>r, 2</sup>	
	Production	Shipments	Production	Shipments	Production	Shipments	Production	Shipments
PAD 1:								
Petroleum and coke	19	20	22	22	180	184	167	168
Natural gas	1	1	2	2	15	15	19	19
Total	20	21	23	24	195	199	186	187
PAD 2:								
Petroleum and coke	73	75	80 <sup>r</sup>	82	650	665	686	679
Natural gas	4	4	3	3	37	37	33	33
Total	77	79	84	85	687	703	718	712
PAD 3: <sup>3</sup>								
Petroleum and coke	381	380	422 <sup>r</sup>	439 <sup>r</sup>	3,570	3,590	3,270	3,280
Natural gas	33	30	43	42	382	379	456	453
Total	414	410	466 <sup>r</sup>	481 <sup>r</sup>	3,950	3,970	3,720	3,740
PAD 4 and 5: <sup>4</sup>								
Petroleum and coke	121	121	127 <sup>r</sup>	125	1,030	1,030	1,060	1,040
Natural gas	122	123	123 <sup>r</sup>	124 <sup>r</sup>	1,070	1,060	947	941
California	95	94	97 <sup>r</sup>	94 <sup>r</sup>	776	773	817	800
Total	244	244	250 <sup>r</sup>	253	2,090	2,090	2,010	1,980
Grand total	755	754	823 <sup>r</sup>	838 <sup>r</sup>	6,920	6,920	6,630	6,610

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>May include revisions to prior months.

<sup>3</sup>Includes the U.S. Virgin Islands.

<sup>4</sup>Quantities produced and shipped in California included in petroleum and natural gas. California total shown for information purposes only.

TABLE 7  
COMPARATIVE SULFUR AND SULFURIC ACID STATISTICS<sup>1</sup>

(Million metric tons per year [annualized basis] and dollars per metric ton for period shown)

	2004			2003
	September	August	Year to date	total
Production	9.21	9.72 <sup>r</sup>	9.25	8.92
Shipments	9.20	9.89 <sup>r</sup>	9.30	8.91
Exports of sulfur	NA	1.58	0.74	0.74
Imports of sulfur:				
Canada	NA	1.96 <sup>e</sup>	2.10 <sup>e</sup>	2.08
Mexico	NA	0.41	0.54	0.54
Total <sup>2</sup>	NA	2.68 <sup>e</sup>	3.00 <sup>e</sup>	2.81
Export of H <sub>2</sub> SO <sub>4</sub>	NA	0.47	0.21	0.21
Import of H <sub>2</sub> SO <sub>4</sub> :				
Canada	NA	1.57	1.94	0.39
Europe	NA	0.39	0.18	0.27
Total <sup>2</sup>	NA	2.29	2.24	0.91
Consumption: <sup>3</sup>				
Domestic sources	NA	8.31	8.57	8.18
Imports	NA	2.68 <sup>e</sup>	3.00 <sup>e</sup>	2.81
Total	NA	11.00	11.57	11.00
Sulfur export values <sup>4</sup>	NA	\$76	\$68	\$62
Sulfur import values: <sup>4</sup>				
Canada	NA	\$12	\$14	\$15
Mexico	NA	\$51	\$56	\$50
Average	NA	\$23	\$27	\$25
H <sub>2</sub> SO <sub>4</sub> export values <sup>4</sup>	NA	\$80	\$114	\$91
H <sub>2</sub> SO <sub>4</sub> import values: <sup>4</sup>				
Canada	NA	\$37	\$39	\$42
Europe	NA	\$28	\$26	\$22
Average	NA	\$32	\$38	\$32

<sup>e</sup>Estimated. <sup>r</sup>Revised. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes other countries not listed.

<sup>3</sup>Because September trade data were not available, September consumption was not determined.

<sup>4</sup>Average value per ton for most recent data available.